DOCUMENT RESUME

ED 326 304 PS 019 069

AUTHOR Carr, Kathryn S.
TITLE How Can We Teach Critical Thinking? ERIC Digest.
INSTITUTION ERIC Clearinghouse on Elementary and Early Childhood Education, Urbana, Ill.
SPONS AGENCY Office of Educational Research and Improvement (ED), Washington, DC.
REPORT NO EDO-PS-90-7
PUB DATE 90
CONTRACT RI88062012
NOTE 3p.
PUB TYPE Information Analyses - ERIC Information Analysis Products (071)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Classification; *Critical Thinking; Elementary Secondary Education; *Reading Skills; Schemata (Cognition); Teacher Responsibility; *Teaching Methods; *Thinking Skills; *Writing Skills
IDENTIFIERS ERIC Digests

ABSTRACT

This ERIC Digest discusses three ways in which teachers can create an environment that stimulates critical inquiry: critical reading; writing to learn; and classification games. Critical reading has been defined as learning to evaluate, draw inferences, and arrive at conclusions based on the evidence. Elbow's (1983) writing to learn approach to first- and second-order thinking is based on a two-step writing process involving freewriting that helps students discover what they think about a topic. In this approach, students use reflection to help them logically develop and control a topic. Classification tasks are integral to vocabulary-concept development and the inquiry approach to science. Classification tasks require that students identify attributes and sort into categories according to some rule. These tasks are important for the retention of information in memory. Instead of relying on special courses and texts, every teacher should employ methods such as these to create an atmosphere where students are encouraged to read deeply, question, engage in divergent thinking, look for relationships among ideas, and grapple with real life issues. (RH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION

ED326304

ERIC Clearinghouse on Elementary and Early Childhood Education
University of Illinois
805 West Pennsylvania Avenue
Urbana, Illinois 61801
(217) 333-1386

PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Lucy Prete Martin/ACEI
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

ERIC Digest

EDO-PS-90-7

How Can We Teach Critical Thinking?

Kathryn S. Carr

The need to teach higher order thinking skills is not a recent one. Education pundits have called for renewed interest in problem-solving for years. As far back as 1967, Raths, Jonas, Rothstein and Wassermann (1967) decried the lack of emphasis on thinking in the schools. They noted that "...memorization, drill, homework, the three Rs [and the] quiet classroom" were rewarded, while "...inquiry, reflection [and] the consideration of alternatives [were] frowned upon."

That students are lagging in problem-solving and thinking skills is apparent at all levels of education. However, critical thinking courses and texts, in particular, may result in fragmentation of thinking skills. Thinking cannot be divorced from content, in fact, thinking is a way of learning content (Raths and others, 1967). In every course, and especially in content subjects, students should be taught to think logically, analyze and compare, question and evaluate. Skills taught in isolation do little more than prepare students for tests of isolated skills (Spache & Spache, 1986). The same criticism may be made with regard to commercial thinking skills materials. However, when such materials are integrated with content, they may become effective tools for attacking real issues.

Implications for Teaching

At each educational level, thinking must be practiced in each content field. This means hard work for the teacher. It's much easier to teach students to memorize facts and then assess them with multiple-choice tests. In a course that emphasizes thinking, objectives must include application and analysis, divergent thinking, and opportunities to organize ideas and support value judgments. When more teachers recognize that the facts they teach today will be replaced by the discoveries of tomorrow, the content-versus-process controversy may be resolved (Gallagher, 1975). As McMillen (1986) noted, "It really boils down to whether teachers are creating an environment that stimulates critical inquiry."

The following is a review of various types of thinking skills activities applied to content areas. While different disciplines frequently require different types of thinking, some techniques are effective across disciplines.

Critical Reading

The topic of teaching students to think while reading—critical reading—should be central to any discussion of thinking skills, in part because the reading of textbooks plays such a prominent role in the content fields. Critical reading has been defined as learning to evaluate, draw inferences and arrive at conclusions based on the evidence (Zintz and Maggart, 1984).

One method that promotes critical reading involves the use of news media in the class. Newspapers, magazines, television, and radio can motivate students to develop critical listening and reading skills. Differing accounts and editorials can be compared as a way of helping students read with a questioning attitude. Students can construct their own arguments for discussion or publication in student newspapers. In the process, they become more discriminating consumers of news media, advertising, and entertainment.

Children's literature is another powerful tool for teaching thinking. Somers and Worthington (1979) noted that "...literature offers children more opportunities than any other area of the curriculum to consider ideas, values, and ethical questions." Furthermore, literature that inspires and challenges helps students learn how to engage and interact with a book.

Writing to Learn

In keeping with the current emphasis on writing across the curriculum, composition and rhetoric scholars stress the teaching of thinking through writing. Elbow (1983) has presented a two-step writing process called first-order and second-order thinking. For first-order thinking, he recommends freewriting—an unplanned, free-association type of heuristic writing designed to help students discover what they think about a topic. The freewriting technique produces conceptual insights. Elbow asked students to write a few incidents that came to mind without careful thinking. This resulted in more intuitive, creative thinking. Elbow cautions that the reflective scrutiny of second-order thinking is a necessary follow-up of freewriting. In this stage, the writer examines inferences and prejudices and strives for logic and control.

Classification Games

Classification plays a significant role in the development of logical thinking and abstract concepts from early childhood to adulthood. Classification skill is integral to vocabulary-concept development and, therefore, to reading and retention of information (Gerhard, 1975). For example, young children group concrete objects or pictures in their efforts to form abstract concepts such as "vegetables," "vehicles" or "wild animals" (Gerhard, 1975).

All classification tasks require the identification of attributes and sorting into categories according to some rule (Furth and Wachs, 1974). While the sorting of concrete objects is an appropriate activity for the young child, verbal analogies (e.g., "How are a diamond and an egg alike?") are appropriate for a learner of any age. A number of commercial materials contain verbal analogies, logic puzzles, figural and symbolic problem-solving, and attribute games. However, application to a wide variety of environmental objects must follow (Furth and Wachs). Integration of classification activities into content areas is crucial to their value. Applications to mathematics and science, especially the inquiry approach to science, are readily apparent.

What may not be obvious are the applications of classification to reading in the content fields (for example, social studies) and the retention of information read. Schema theory holds that information, if it is to be retained, must be categorized with something already stored in memory (Tonjes and Zintz, 1987). Brainstorming techniques that aid comprehension are recommended to help students access their prior knowledge about a topic to be read, and thus classify and retain the new information.

Devine (1986) pointed out that it may be necessary to restructure students' schemata when prior experiences that are limited to a different context interfere with gaining a new concept. Devine used the example of students who were having difficulty seeing relationships between the concepts of social class and caste system. In a word association task, the students were asked to list everything they knew about each term separately. Then they were asked to find similarities—for example, classify related facts and events, identify the common thread among them, and label them—thus forming new concepts or schemata.

Conclusion

The urgent need to teach thinking skills at all levels of education continues. But we should not rely on special courses and texts to do the job. Instead, every teacher should create an atmosphere where students are encouraged to read deeply, question, engage in divergent thinking, look for relationships among ideas, and grapple with real life issues.

This digest was adapted from an article titled, "How Can We Teach Critical Thinking?" by Kathryn S. Carr, which appeared in *Childhood Education* (Winter, 1988): 69-73.

For More Information

Carr, Kathryn S. "How Can We Teach Critical Thinking?" *Childhood Education* (Winter, 1988): 69-73.

Devine, T.G. *Teaching Reading Comprehension: From Theory to Practice*. Boston: Allyn and Bacon, 1986.

Elbow, P. "Teaching Thinking by Teaching Writing." *Change* (September, 1983): 37-40.

Furth, H.G., and Wachs, H. *Thinking Goes to School. Piaget's Theory in Practice*. New York: Oxford University Press, 1974.

Gallagher, J.J. *Teaching the Gifted Child*. Boston: Allyn and Bacon, 1975.

Gerhard, C. *Making Sense: Reading Comprehension Improved Through Categorizing*. Newark, DE: International Reading Association, 1975.

McMillen, L. "Many Professors Now Start at the Beginning by Teaching Their Students How to Think." *Chronicle of Higher Education* (March 5, 1986): 23-25.

Raths, L.E., Jonas, A., Rothstein, A., and Wassermann, S. *Teaching for Thinking, Theory and Application*. Columbus, OH: Charles E. Merrill, 1967.

Somers, A.B., and Worthington, J.E. *Response Guides for Teaching Children's Books*. Urbana, IL: National Council of Teachers of English, 1979.

Spache, G.D., and Spache, E.B. *Reading in the Elementary School*. Boston: Allyn and Bacon, 1986.

Tonjes, M.J., and Zintz, M.V. *Teaching Reading, Thinking, Study Skills in Content Classrooms*. Dubuque, IA: Wm. C. Brown, 1987.

Zintz, M.V., and Maggart, Z.R. *The Reading Process, the Teacher and the Learner*. Dubuque, IA: Wm. C. Brown, 1984.

This publication was funded by the Office of Educational Research and Improvement, U.S. Department of Education, under contract no. OERI 88-062012.. Opinions expressed in this report do not necessarily reflect the positions or policies of OERI. ERIC Digests are in the public domain and may be freely reproduced and disseminated.

END

U.S. Dept. of Education

Office of Education
Research and
Improvement (OERI)

ERIC

Date Filmed

March 29, 1991